



**KPPC**

Kentucky's Resource Center for  
Environmental Sustainability

J.B. Speed School of Engineering University of Louisville

Kentucky Pollution Prevention Center  
**Water/Wastewater  
Energy Efficiency (E2)  
Training Workshop**

**Bluegrass Area Development District  
Office  
Lexington, KY**

**April 7, 2011**

**Cam Metcalf**

*Executive Director – KPPC*

# Key Elements for a Sustainable World: Energy, Water & Climate Change



# Our “Universal Backyard”



- ☐ **NIMBY**
- ☐ **NOTE**
- ☐ **BANANA**
- ☐ **CAVE**
- ☐ **NOPE**



# What is KPPC?

- KPPC is a non-profit organization established in 1994 through a state legislative mandate
- Provide statewide technical assistance & outreach programs
- Based at the *University of Louisville's* J.B. Speed School of Engineering
- Represents the *University of Louisville* as a nationally recognized Center of Excellence
- Provides hands-on training for students through the Cooperative Education Program at SSoE

# KPPC Mission

KPPC is Kentucky's primary resource to help businesses, industries and other organizations develop environmentally sustainable, cost-saving solutions for improved efficiency.

Based at the **University of Louisville J.B. Speed School of Engineering**, KPPC provides technical information and assistance that is free, confidential and non-regulatory.

# KPPC's Core Programs



**ES** – Environmental Sustainability



**KEEPS** – KY Energy Efficiency Program for Schools



**KREC** – KY Renewable Energy Consortium

# EPA ES 7-Step Energy Management Process

## MANAGEMENT

## TECHNICAL



**COMMITMENT TO  
CONTINUAL  
IMPROVEMENT**



**SET GOALS**



**ACTION PLAN**



**IMPLEMENT PLAN**



**EVALUATE PROGRESS**



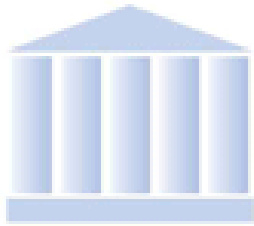
**RECOGNIZE ACHIEVEMENTS**



**MONITOR & MEASURE**

**ENERGY BASELINE**

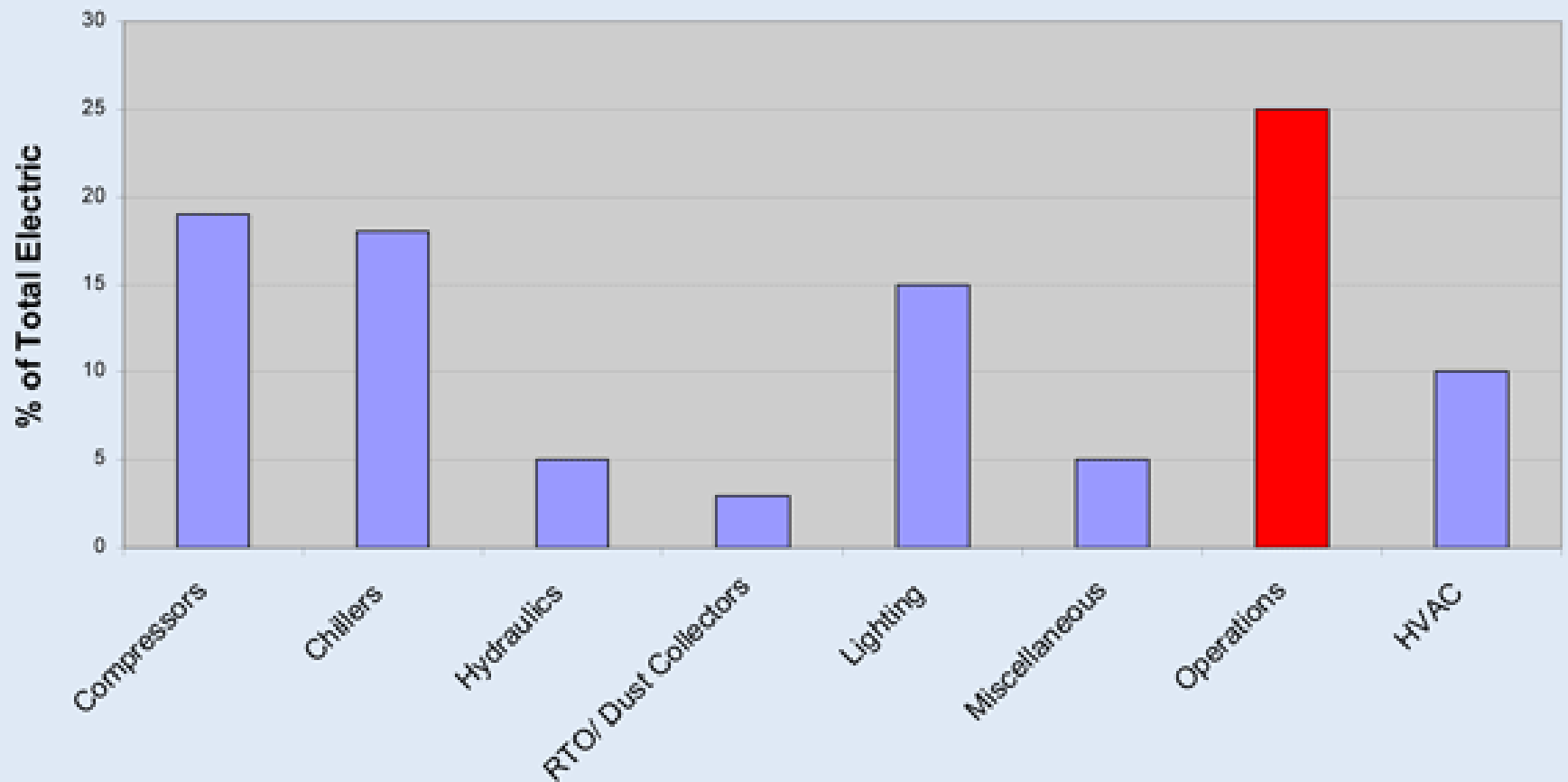
**ENERGY EFFICIENCY  
OPPORTUNITY  
ASSESSMENTS**



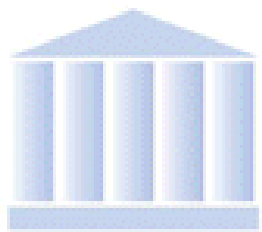
# SUSTAINABILITY EXCELLENCE



## Richmond Electricity Allocation







# SUSTAINABILITY EXCELLENCE



## Cooling Tower Water Reduction

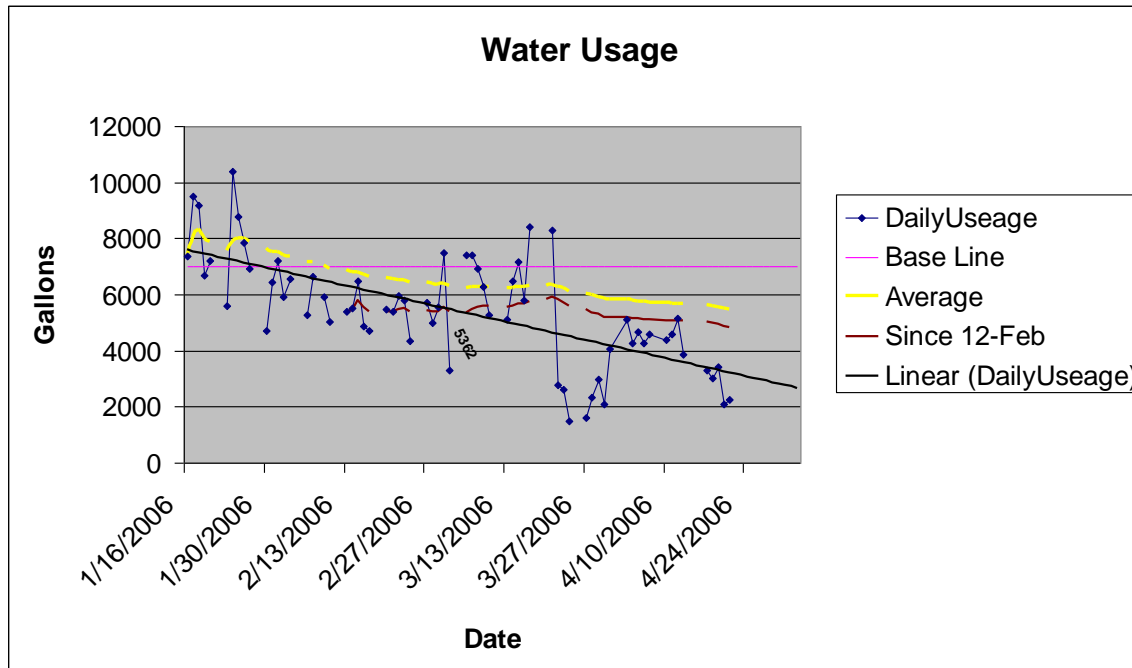
- Water Reduction: 1,023,500 gal
- Water Savings: \$10,750.23
- Chemical Savings: \$10,007
- Total: \$20,757.23



# Conductivity Rinse Water Controllers for Electro Deposition Paint Line

## Automobile Parts Manufacturer

- Before trial used 7,600 GPD
- After 3 months trending to 2,700 GPD
- Conserves water resources
- Saves money in treatment chemicals & sludge hauling



# US EPA Office of Wastewater Management (OWM)

## “Evaluation of Energy Conservation Measures for Wastewater Treatment Facilities”

- Recommended approach to energy management
- Energy conservation measures for pumping systems
- Design and control of aeration systems
- Blower and diffuser technology for aeration systems
- Innovative and emerging energy conservation measures for selected treatment processes
- Energy conservation measures for solids processing
- Summary of facility case studies

**EPA 832-R-10-005**

# US EPA Climate Ready Water Utilities (CRWU) Initiative Launched

CRWU-related tools and resources are available/under development:

- The [Climate Resilience Evaluation and Awareness Tool \(CREAT\)](#) is an interactive tool designed to assess potential climate change impacts on water and wastewater utilities.
- The [CRWU Toolbox](#) is a searchable online database of climate-related resources for utilities at all stages of the planning and decision making process.
- The [Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response, & Climate Resiliency \(TTX Tool\)](#) helps users plan, customize and conduct water sector-specific tabletop exercises on five climate change scenarios.
- The Utility Climate Change Adaptation Measures Guide is currently being developed to provide information on existing and suggested adaptation measures.
- The Adaptive Response Framework Guide is currently being developed to provide additional descriptions and resources for potential climate change activities that support climate resilience at a water or wastewater utility.

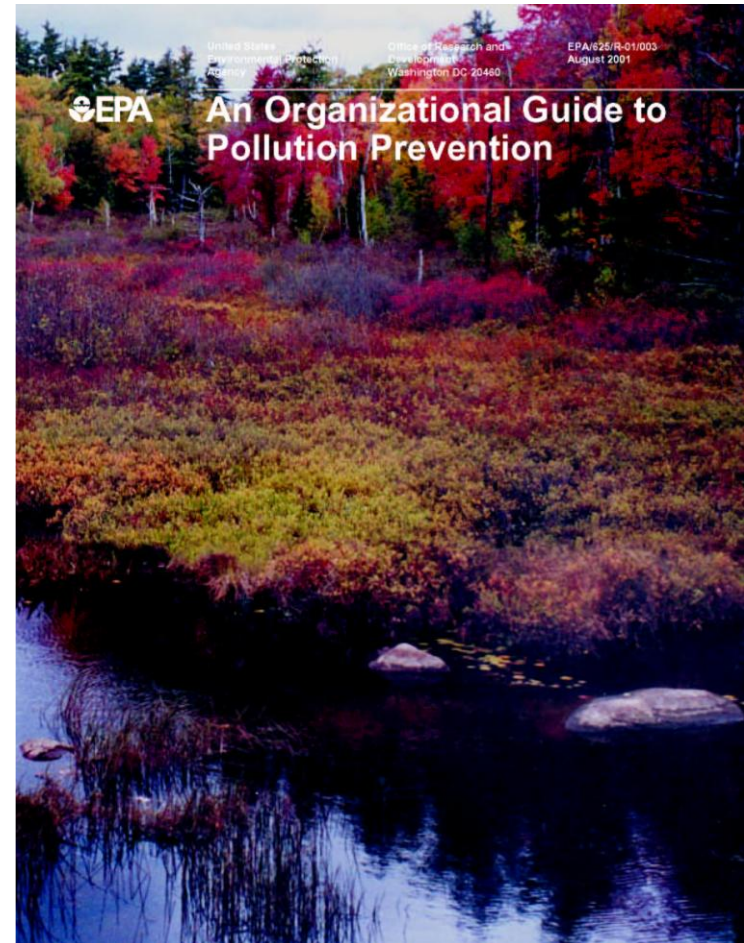
<http://water.epa.gov/infrastructure/watersecurity/climate/>

# *An Organizational Guide to Pollution Prevention*

**Publication #**

**EPA/625/C-01/003**

- ✓ **A new approach, unlike previous assessment manuals**
- ✓ **Basic P2 Concepts and Tools (Chapters 1-4)**
- ✓ **P2 Program Implementation Approaches (Chapters 5-8)**





# STAY FOCUSED ON THE TASK







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**April 7, 2011**